

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

Claims 1-9 are canceled.

10. (new): An automatic programming method of positioning a product model in a work model, and determining a machining area based on a state of positioning the product model, the automatic programming method comprising:

a first processing including

detecting a turning surface having a largest diameter in the product model; and

determining a central axis of rotation on the turning surface detected as a turning axis of the product model;

a second processing including shifting or rotating the product model so that the turning axis of the product model determined matches a turning axis of the work model; and

a third processing including shifting the product model so that an end face of the product model shifted at the second processing matches a program origin preset in the work model.

11. (new): The automatic programming method according to claim 10, further comprising a fourth processing including reversing a direction of the product model by 180 degrees with a central position of the product model in a direction of the turning axis as a center.

12. (new): The automatic programming method according to claim 10, wherein when a part of the turning surface is missing, the first processing further includes setting a distance from the central axis of rotation to the farthest point as a diameter of the turning surface.

13. (new): The automatic programming method according to claim 10, wherein the product model is displayed in a state held by a jig model.

14. (new): A computer-readable recording medium that stores a computer program for positioning a product model in a work model, and determining a machining area based on a state of positioning the product model, wherein the computer program makes a computer execute

a first processing including  
detecting a turning surface having a largest diameter in the product model; and  
determining a central axis of rotation on the turning surface detected as a turning  
axis of the product model;

a second processing including shifting or rotating the product model so that the turning  
axis of the product model determined matches a turning axis of the work model; and

a third processing including shifting the product model so that an end face of the product  
model shifted at the second processing matches a program origin preset in the work model.

15. (new): The computer-readable recording medium according to claim 14, wherein the  
computer program further makes the computer execute a fourth processing including reversing a  
direction of the product model by 180 degrees with a central position of the product model in a  
direction of the turning axis as a center.

16. (new): The computer-readable recording medium according to claim 14, wherein when a  
part of the turning surface is missing, the first processing further includes setting a distance from  
the central axis of rotation to the farthest point as a diameter of the turning surface.

17. (new): The computer-readable recording medium according to claim 14, wherein the  
product model is displayed in a state held by a jig model.

18. (new): An automatic programming device that positions a product model in a work  
model, and determines a machining area based on a state of positioning the product model, the  
automatic programming device comprising:

a first unit that detects a turning surface having a largest diameter in the product model,  
and determines a central axis of rotation on the turning surface detected as a turning axis of the  
product model;

a second unit that shifts or rotates the product model so that the turning axis of the  
product model determined matches a turning axis of the work model; and

a third unit that shifts the product model so that an end face of the product model shifted  
by the second unit matches a program origin preset in the work model.

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19. (new): The automatic programming device according to claim 18, further comprising a fourth unit that reverses a direction of the product model by 180 degrees with a central position of the product model in a direction of the turning axis as a center.

20. (new): The automatic programming device according to claim 18, wherein when a part of the turning surface is missing, the first unit sets a distance from the central axis of rotation to the farthest point as a diameter of the turning surface.

21. (new): The automatic programming device according to claim 18, wherein the product model is displayed in a state held by a jig model.